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The preceding references to reviews in the *Fortschritte* do not imply that the present writer does not believe in critical mathematical reviews. On the contrary, he heartily believes in public criticism since such criticism is much more apt to be fair than private criticism, and most people form their judgment of the works of others from one or the other of these two sources. It is unfortunate but natural that the reviewers for the *Fortschritte* have exhibited wide differences of judgment as regards such reviews. Many of them were non-critical and practically contented themselves with an exhibition of the main results found in the work under review without even distinguishing between what was known earlier and what was then new. A few others were unduly critical as a result of their own ignorance of the subject under review and their youthful ambition to appear wise. On the whole these reviews are, however, very valuable as many of us know from experience and the *Fortschritte* has always been one of the most important mathematical periodicals for those seeking a broad knowledge of our subject.

It was not without misgivings that I ventured to appear before you on such an occasion as a critic of certain minor parts of the literature to which so much of my energy has been devoted. The normal attitude of mind should be to get all the good we can out of the writings of others and to make allowances for shortcomings, for we all admire generosity and many of us feel the need thereof. On the other hand, as teachers it behooves us also to strive hard to guide those who depend on us so that they may avoid the pitfalls which beset their ways. It is, therefore, necessary for us to become also familiar with this less attractive phase of our subject. Criticisms do not necessarily imply that the author thereof feels that he could have done better than the one that is being criticized but only that he feels that he can add another element which will tend to make the truth stand out more brightly. The preceding remarks are to be construed in this spirit.

THE APRIL MEETING OF THE IOWA SECTION.

The tenth regular meeting of the Iowa section of the Mathematical Association of America was held, in conjunction with the thirty-sixth annual meeting of the Iowa Academy of Science, at Drake University, Des Moines, Iowa, on April 29, 1922. The meeting consisted of one session with Professor C. W. EMMONS presiding. There were twenty-five in attendance, including the following twenty members of the Association:

O. W. Albert, E. W. Chittenden, Julia T. Colpitts, C. W. Emmons, Fay Farnum, C. Gouwens, E. C. Kiefer, G. E. King, R. B. McClenon, F. M. McGaw, J. V. McKelvey, Martha McD. McKelvey, I. F. Neff, E. A. Pattengill, J. F. Reilly, H. L. Rietz, Maria M. Roberts, E. R. Smith, G. W. Snedecor, C. W. Wester.

The following officers were elected for 1922–1923: Chairman, C. W. EMMONS, Simpson College; Vice-chairman, I. F. NEFF, Drake University; Secretary-treasurer, J. F. REILLY, State University of Iowa. A committee consisting of Professors Wester, Colpitts and Neff was appointed to draw up resolutions expressing the feeling of the section on the death of Professor B. F. Simonson, and the illness of Professor W. J. Rusk.

The next meeting will be held at Des Moines in November.

The following papers were presented:

(1) "The method of averages" by Professor G. W. SNEDECOR;

(2) "Mathematical bulletins" by Professor T. M. BLAKSLEE (by title);

(3) "Topics in general analysis" by Professor E. W. CHITTENDEN;

(4) "The place of the equation in a scheme of education" by Professor C. W. WESTER;

(5) "Persymmetric determinants whose elements are finite sums" by Professor E. R. SMITH;

(6) "On the meaning of the classification of statistical series by means of the Lexis ratio" by Professor H. L. RIETZ;

(7) "Definitions of imaginary and complex numbers" by Professor E. S. ALLEN (by invitation);

(8) "An extension of the figurate numbers" by Professor J. F. REILLY.

Abstracts of the papers follow below, the numbers corresponding to the numbers in the list of titles:

1. The generalization of the King-Hardy method of fitting the mortality curve was indicated. The method of averages is the special case in which the function to be fitted is linear. This method was compared to the method of least squares. Professor Snedecor showed that the method of averages can be depended upon to give good results if, and only if, the departure of the data from linearity is small.

2. Professor Blakslee suggested a solution of a pedagogical problem. He thinks that in our teaching the earlier foundations of mathematics are usually omitted. He suggested that state bulletins be issued to remedy this, holding that under the plea of "saving time" time is now being lost.

3. Professor Chittenden presented, in addition to a discussion of the significance of the fundamental notions of neighborhood, limit and distance in general analysis, the solution of a problem proposed by Fréchet. If it is possible to define distance for a space S with a preassigned definition of elements of accumulation so that the elements of accumulation remain unchanged and every sequence of elements of S which satisfied the Cauchy condition has a limit in S, the space S is said to be complete. It is found, in answer to an inquiry of Fréchet, that the rational numbers form an incomplete space S.

(4) This paper asserts that the only equations needed to solve the usual problems of the grades are of the types, $n \pm a = b$, $an = b$, $x^2 \pm a = b$, $1/x + 1/a = 1/b$. The linear types can be thoroughly mastered for whole numbers in the second and third grades, and the extension to all rational numbers in the later grades is extremely easy. The work for teacher and pupil will be less than at present and with greatly increased efficiency. The equation will become,

for all educated people, the normal medium for thought about number relations and for expression of that thought. These statements were made by Professor Wester on the basis of tests given in the classroom.

5. In fitting parabolic curves by the method of least squares or by the method of moments a normal system of equations is formed whose determinant was given. Professor Smith showed that for certain useful sets of values this determinant may be reduced to a simple expression whose numerical value is easily computed.

6. In this paper Professor Rietz gave an exposition of the meaning of the Lexis ratio as it arises in the comparison of Poisson and Lexis distributions with corresponding Bernoulli distributions. He then showed how to apply this criterion to experiments with games of chance and to actual statistical data, and emphasized that we may obtain from this criterion important indications as to whether the dispersion has its foundation in a constant probability or in probabilities with certain types of variation.

7. Professor Allen's paper has been published in this MONTHLY, *1922*, 301.

8. In this paper Professor Reilly represented by ${}^aH_m{}^{a-k}$ the sum of all the products of degree m that can be formed from the quantities a, $a-1$, $a-2$, $\cdots$, $a-k$, putting ${}^aH_0{}^{a-k} \equiv 1$. Then he showed that if m and k be each given the values 0, 1, 2, 3, $\cdots$, a being arbitrary, a system of numbers is obtained similar to but more general than the figurate numbers. The law of formation of this system of numbers is

$${}^aH_{m+1}{}^{a-k} \equiv {}^aH_{m+1}{}^{a-k+1} + (a-k)\,{}^aH_m{}^{a-k}.$$

These numbers were found useful in reducing a certain type of determinant.

JOHN F. REILLY, *Secretary-Treasurer.*

THE MAY MEETING OF THE MARYLAND-VIRGINIA-DISTRICT OF COLUMBIA SECTION.

The eleventh regular meeting of the Maryland-Virginia-District of Columbia Section of the Association was held at the United States Naval Academy, Annapolis, Maryland, on Saturday, May 13, 1922. The Chairman of the Section, Mr. O. S. Adams, presided at both morning and afternoon sessions.

There were sixty-two in attendance, including the following forty-two members of the Association: O. S. Adams, J. J. Arnaud, R. N. Ashmun, H. G. Avers, E. A. Bailey, A. J. Barrett, Sarah Beall, G. A. Bingley, C. C. Bramble, J. A. Bullard, Paul Capron, G. R. Clements, A. Cohen, L. S. Dederick, A. Dillingham, J. B. Eppes, Harry English, J. N. Galloway, W. M. Hamilton, W. E. Heal, P. E. Hemke, Nelle L. Ingels, R. P. Johnson, L. S. Johnston, W. D. Lambert, J. J. Luck, E. S. Mayer, Frank Morley, C. A. Mourhess, F. D. Murnaghan, J. R. Musselman, C. A. Nelson, E. C. Phillips, O. J. Ramler, C. H. Rawlins, Jr., J. N. Rice, M. R. Richardson, H. M. Robert, Jr., R. E. Root, W. F. Shenton, C. A. Shook, T. McN. Simpson, Jr.